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March 16, 2016

To: Supervisor Hilda L. Solis, Chair  
Supervisor Mark Ridley-Thomas  
Supervisor Sheila Kuehl  
Supervisor Don Knabe  
Supervisor Michael D. Antonovich

From: Sachi A. Hamai  
Chief Executive Officer

## **REPORT BACK ON FEASIBILITY ANALYSIS AND FULL COST ESTIMATES FOR THE PROPOSED SHERIFF'S EMERGENCY VEHICLE OPERATIONS CENTER PROJECT (ITEM NO. 50-G, AGENDA OF APRIL 14, 2015)**

On April 14, 2015, a motion by Supervisor Kuehl, amended by Supervisor Solis, instructed the Chief Executive Officer (CEO), in consultation with the Sheriff's Department (Sheriff), and the Department of Public Works (DPW), to begin the pre-design process for the proposed Sheriff's Emergency Vehicle Operations Center (EVOC) Project, and submit a report by August 1, 2015, that includes a feasibility analysis and full cost estimates for the proposed Project, including the vehicle driving/training track, maneuver skid pad, motorcycle training area, new office and parking area, relocation expense, survival tactics role play facility, access road replacement, soft costs, and project contingencies. The EVOC Project is proposed to utilize several parcels of undeveloped land within the existing Pitchess Detention Center (PDC) in Castaic, California.

On July 8, 2015, the CEO requested an extension to report back to your Board on this item, from August 1, 2015 to September 15, 2015, to allow the consultants to complete the required studies and feasibility report. During this process, the consultants found that, due to the proximity of the proposed EVOC track to the surrounding hillsides, additional measures would be required to comply with Low Impact Development (LID) standards, and to address storm water runoff. Based on these additional measures, the consultants projected a significant budgetary impact to the proposed Project not originally anticipated, resulting in an overall rough order magnitude (ROM) cost of approximately \$19.63 million.

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Due to the projected cost impact, the CEO, DPW, and Sheriff worked collaboratively to identify an alternate location at PDC for the proposed EVOC site. On November 18, 2015, the CEO requested an additional extension to January 26, 2016, in order to study the alternate site at PDC, which is comparable in size, but potentially minimizes the LID and storm water runoff requirements.

### **FEASIBILITY ANALYSIS**

DPW completed a feasibility analysis of the proposed EVOC Project on January 26, 2016. A copy of the report is attached for reference. The report assessed the project requirements, existing site conditions, environmental considerations, and their associated costs. The proposed Project will facilitate the development of:

- Driver Training Track;
- Skid Pad;
- Road Work over channel;
- Parking Lot Re-paving;
- Relocation of Modular Buildings from Fairground;
- Role Play Village; and
- Earthwork.

It should be noted that the following components were deleted from the original scope of the proposed Project:

- Motorcycle Training area
- Replacement of Biscailuz Drive

The Motorcycle Training area will be sited in an existing parking lot adjacent to the proposed EVOC site, and is not included in the overall Project cost. The replacement of Biscailuz Drive will be handled separately from this proposed Project.

### **Track Layout Studies**

The analysis considered several alternatives before arriving at a layout that minimizes the necessary modification to the existing terrain, and will allow the Sheriff to meet the Peace Officer Standards and Training (POST) requirements for driver training. The analysis considered a number of factors, such as cost, turning/maneuvering radius, building locations, and vehicle safety runoff area. In addition, a variety of existing site constraints were assessed (e.g., easements, drainage channel).

Based on these unique features of the site and stakeholder's input, a Base Scheme was developed. The Base Scheme includes, but is not limited to the following:

- Collision Avoidance Exercise area, which assesses situational awareness, braking and steering techniques, and throttle control, is located away from the edge of the track by 40 feet at the nearest location, and 72 feet away from the track at the furthest location;
- Placement of the modular classroom buildings and the Role Play Village in a portion of the existing detention visitor parking area, separated from the rest of the parking area via fenced enclosure;
- Development of an access road from the EVOC track to the Role Play Village; and
- Locating the Hairpin Turn south of Batch Plant Road to safely avoid the existing power poles.

This Base Scheme meets the POST requirements and operational needs of the Sheriff and was used to develop the preliminary cost estimate for the proposed Project.

#### Estimated Cost

A cost analysis was conducted to ascertain the construction costs for the Base Scheme Project components, associated soft costs, and any additional costs that were identified through the Feasibility Analysis. The total estimated construction cost of the main Project components is \$8.02 million, with associated soft costs (which includes design, permits, contingency, construction administration, and construction management) of approximately \$1.91 million, for a total estimated cost of \$9.93 million.

Additionally, the analysis concludes that further engineering efforts would be required to address storm water management systems and bio-retention ponds, as required by California Building Code and County of Los Angeles' LID Standards. It is estimated that addressing the required LID Standards, site grading, and utility systems will add \$4.99 million in hard and soft costs to the main Project components, bringing the total project cost estimate to \$14.92 million, which represents an overall budgetary shortfall of approximately \$4.42 million.

#### Site Utilities and Easements

As detailed in the Feasibility Analysis, there is an existing water line, and an existing gas line adjacent to the proposed site, which will not impact construction. We will develop a plan for addressing any easement restrictions with the owner of the utilities prior to any construction.

Each Supervisor  
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## **NEXT STEPS**

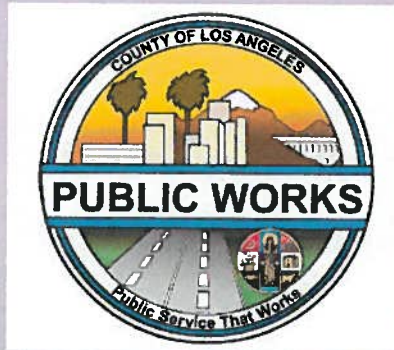
DPW will obtain design proposals for the EVOC Project, including construction cost estimates, based upon the concept in the feasibility report. Following approval by the Sheriff and CEO, DPW will oversee the design services through to permitting and environmental documentation. Based on the final design's cost estimate for constructing the proposed Project, the Sheriff will work with the CEO to determine the final funding required and/or potential scope reductions. There is a possibility that during the design process, additional efficiencies may be realized which could reduce the budgetary shortfall. After the design is completed, we will return to your Board to establish the project budget and schedule, and advertise the project for bids.

If you have any questions, please contact Brad Bolger of my staff at (213) 974-1360, Jim Kearns of Public Works at (626) 300-3200, or Tracey Jue of the Sheriff's Department at (323) 526-5657.

SAH:JJ:DPH:BMB  
FC:MJD:zu

Attachment

c:     Executive Office, Board of Supervisors  
       County Counsel  
       Public Works  
       Sheriff



## FEASIBILITY STUDY & COST ESTIMATE

Contract PW 13905

# SHERIFF'S DEPARTMENT EMERGENCY VEHICLE OPERATIONS CENTER PROJECT



JANUARY 26, 2016



Prepared for County of Los Angeles  
Department of Public Works

**GRUENASSOCIATES**  
ARCHITECTURE PLANNING INTERIORS LANDSCAPE

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## A. EXECUTIVE SUMMARY

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Gruen Associates and its team of consultants (Design Team) have been authorized by the County of Los Angeles Department of Public Works to develop an Emergency Vehicle Operations Center (EVOC) conceptual layout and corresponding cost estimate for the proposed project site. The existing Los Angeles Sheriff's Department EVOC, currently located at the Pomona Fairgrounds, was examined in this report to be relocated from its current location to the proposed Peter J. Pitchess Detention Center site in Castaic, CA. The EVOC is used for providing tactical drivers training for deputy sheriff trainees and police officers enrolled in the Department's Academy. Ongoing disruptions to the Pomona EVOC operations have forced LASD to examine a permanent solution for locating the EVOC on a site which can facilitate a full time use.

A previous study located the proposed EVOC on an adjacent area within the Pitchess Detention Center site. The previous site was located next to a hillside which directed storm water runoff onto the proposed EVOC track. Storm water runoff from the adjacent hillside required extensive measures to comply with Low Impact Development (LID) such as perimeter concrete drainage channels, which resulted in significant overall project costs. These additional drainage measures required for neighboring hillside storm water runoff led towards identifying an alternate site. The new alternate site, comparable in area to the previous site study, eliminated the concrete channels required for storm water management, and as a result, significantly reduced the overall project costs.

The 44.5 acre proposed alternate site is relatively flat, with less than 5% slope across the site at the proposed EVOC track locations. The proposed site is located north of the existing detention visitor center, and is bound by Biscailuz Drive to the east, Batch Plant Road to the north, Dirt Road to the west, and a drainage channel along the southern edge. Existing topography for the site directs storm water from the northeast towards the southwest, collecting at the southern drainage channel and routed towards the west.

As part of the feasibility study, several layout options were developed in order to further define the programmatic needs of the project as well as site adapting program components from the Pomona EVOC. The proposed Pitchess site is not large enough to accommodate the current Pomona EVOC's layout and size, and therefore a number of the program components will have to be downsized to approximately 2/3rds of what is currently at the Pomona EVOC in order to fit within the Pitchess site boundary.

A number of EVOC track configurations were developed and examined by the Design Team, and discussed with LASD and LADPW in order to derive at a solution which was cost effective, yet met the programmatic requirements for the EVOC. Several existing modular buildings from the Pomona EVOC are planned to be relocated to the Pitchess site in order to gain additional cost savings associated with the project. Current Pomona EVOC operations include asphalt concrete paved track area and safety runoff, however in the efforts to develop a cost effective paving solution for the Pitchess EVOC, compacted soil is proposed for the safety runoff area. Role Play Village and the relocated modular buildings have been examined both on and off the immediate site, and are shown integrated into the northwest corner of the existing detention center visitor parking area in order to best utilize available site area. A built up access road leading from the EVOC track crosses the existing drainage channel, and provides access to the Role Play Village and modular buildings, which will be enclosed with a security fence to separate these program areas from the adjacent visitor parking area.

The Cost Estimate has been formatted to identify major categories of work. Engineering efforts applied to the proposed EVOC layout have added miscellaneous scope items such as stormwater management systems and bio-retention ponds to the overall project budget, which will be required by Building Codes. The Cost Estimate is broken down into categories of direct unit construction costs as well as unit costs with markups (contingencies, permits, management fees, A&E fees, and other "soft" project costs). Construction duration is based on a 24 month Design/Bid/Build delivery method, with project escalation allowances included up to the mid-point of construction.

## **B. SITE INVESTIGATION**

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### **1. Background**

The Los Angeles County Sheriff's Department is in the need to relocate their current Emergency Vehicle Operations Center and Role Play training facility. For more than 35 years, the Los Angeles County Sheriff's Department (LASD) has been providing training to deputy sheriff trainees and police officers enrolled in the Department's Academy. The Emergency Vehicle Operations Center (EVOC) is currently located on the Los Angeles County Fair Association's property in Pomona, where in 1986 the County of Los Angeles entered into a 56 year Ground Lease and Operating Agreement with the Fair Association to operate and maintain the fairground. In this Agreement, it is stated that the Fair Association shall allow LASD to use a portion of the fairground for automobile drivers training and motorcycle training.

The current arrangement that LASD has with the Fair Association requires the relocation of the EVOC office and equipment off-site for a period of approximately 2-3 months while major events such as the County Fair and National Hot Rod Association events take place. These disruptions to the EVOC training schedule have shortened the number of training days available to LASD.

Instruction provided by the EVOC is certified by the California Commission Peace Officer Standards and Training (POST). POST requirements have been increased in the past couple of years, requiring trainees to receive 40 hours of training instead of the previous 24 hours required, and nighttime driver's training as well. Due to the increase in certification requirements and diminished access to the Fairgrounds facility, it has become impossible for LASD to meet these training standards at their current EVOC location.

The County of Los Angeles Department of Public Works (DPW) has authorized Gruen Associates and its consultants (Design Team) to conduct a feasibility study and cost estimate for the relocation of the LASD's Pomona EVOC to the Pitchess Detention Center near Castaic, CA. The feasibility study included developing an EVOC layout and alternatives for the proposed Pitchess site, along with a cost estimate which reflects the proposed design. Program for the proposed EVOC includes a driver training track, skid pad, office and classroom structures and parking area, relocated offices from Pomona EVOC, and Role Play Village.

An authorization to proceed with the feasibility study and cost estimate was given to the Design Team on 12/8/2015.

### **2. Project Site**

The site is located adjacent to the Peter J. Pitchess Detention Center, located at 29310 The Old Road, Castaic, CA 91384. The site is generally flat with a gentle downhill east-to-west slope, and is bound by Batch Plant Road to the north, with Biscailuz Drive to the east, Dirt Road to the west, and a drainage channel south of the proposed site. Overall site area for the proposed EVOC is approximately 1,937,112 square feet, or approximately 44.5 acres.

An existing visitor center is located south of the site and drainage channel. The visitor center is surrounded by adjacent asphalt paved surface parking, which is primarily utilized during weekends.

### **3. Pitchess Detention Center Site Visit**

A visit to the Pitchess Detention Center site was performed by the design team. During this site visit, representatives from the County and LASD were present to discuss the project. Site photos were taken, along with observations of existing conditions, and are included as part of this report.



#### **4. Pomona EVOC**

LASD currently operates an EVOC at the Pomona Fairgrounds. The address for the EVOC is 1445 W McKinley Ave, Pomona, CA 91768. First hand observations of the Pomona EVOC were made by the Design Team as they were able to go out onto the driving course with the accompaniment of an LASD instructor, demonstrating how the course is currently used.

During this visit, members of the Design Team met with County and LASD representatives to discuss the project requirements. Below is the list of project requirements that were developed as a result:

##### **Driver Training Track**

- 40' width for track, but additional width needed for safety runoff on each side.
- For straight track areas: 40' of safety runoff.
- For curved track areas: 100' of safety runoff (depending on position of curve).
- Collision avoidance exercise: 3 lights on asphalt area.
- Night driving exercises with required lighting.
- City street simulation area with street lighting levels.
- No lighting poles, etc. allowed in middle of city blocks.
- Removal of all trees within the high speed track and safety runoff areas.
- Removal of all trees within City Simulation areas.
- Signal lights at track entries to indicate "hot" track.

##### **Skid Pad**

- Approximately 205' x 450' (92,250 sf) of smooth troweled concrete.
- (2) hose positions, along with bubblers at the high sides of the pad.
- Water reclamation trench.
- Underground cistern for water collection.
- Pump and filtration system.

##### **Parking area**

- 107 total parking spaces. 35 training cars, 12 instructor cars, 20 student cars, 30 class cars, 10 motorcycles.

##### **Office and Classroom structures**

- (1) 25-person classroom needed for motorcycle training.
- Classrooms for 60 students for quarterly certifications: (3) 20 student classrooms.
- Office space for 2 sergeants and 6 deputies.
- New restrooms (fixture count based on occupancy of classrooms and office space).
- Locate away from driver training track.

##### **Role Play Village**

- (4) 20' x 30' structures shown on preliminary layout.

The Design Team proposed a program for Role Play Village which incorporated a 75' diameter cul-de-sac. The cul-de-sac would have a curb and a 4' wide sidewalk, and four 30' wide by 20' deep structures (600 square feet each) in order to make the smaller structure sizes more economical. Reducing the size of these structures to less than 1,000 square feet each, and spacing them farther than 20' apart from each other would also allow them to comply with the non-response requirements set by the Fire Department. The 600 square foot structures would be large enough so that they could be divided into 3 rooms to simulate a house environment (large entry/living and two rooms). Type V new construction with plaster exterior and a pitched roof with asphalt shingles would make up the materials for these small structures. Fences would also be added to create a more residential appearance for LASD training.

These project requirements served as the basis for developing the EVOC layout for the proposed Pitchess Detention Center site.

## **5. Meetings with Jurisdictional Agencies**

### **a. Building and Safety Meeting**

The Design Team, County DPW, and County Building and Safety met to discuss the project.

Plans for relocating the existing modular buildings at the Pomona EVOC was discussed. Currently, there are three modular buildings which are proposed to be relocated to the Pitchess EVOC, along with an additional new restroom modular building. One of the modular buildings measures 48' by 60', and is comprised of 2 classrooms, two sgt. offices and cubicles for 15 deputies/staff members, and two restrooms. The second modular building measures 24' by 50', and contains restrooms and lockers. The third building, which measures 24' x 40', contains a classroom and a simulator training room. An additional new restroom building which is 1200 square feet in area will be added to the group of buildings. Building and Safety indicated that all of these structures need to be State certified for their occupancy and use, but that Building and Safety will review the foundation anchoring for each structure. Accessibility within the modular buildings will not be reviewed by Building and Safety, however code compliance will be needed for elevated decks and stairs associated with providing access to these structures. It was indicated that the modular buildings at Pomona EVOC are currently State certified for their use.

Due to the Very High Fire Hazard Severity Zone (Zone 4) that the site falls within, special construction for exterior materials is required for all proposed structures. Building and Safety mentioned that the relocated modular buildings from the Pomona EVOC would need to be certified by the State for compliance in this Fire Zone. Information regarding the construction of the Pomona EVOC existing modular buildings has not been provided to the Design Team.

The proposed Role Play Village structures were also discussed. Building and Safety stated that these structures would not be considered "occupied" since they are solely used for training exercises and not normally occupied otherwise, and that ADA accessibility, fire and life safety, and restroom requirements per Building Codes for these structures would not be needed. The proposed Role Play Village structures would however need to be reviewed for structural design compliance with current Building Code.

### **b. Fire Department Meeting**

A meeting between the Fire Prevention Division, County DPW, and Design Team took place at the Santa Clarita Office, located at 23757 Valencia Blvd. in Valencia, CA.

Fire hydrant access was discussed as it pertains to proposed structures for the EVOC. Existing modular classroom and office buildings which are planned to be relocated from the Pomona EVOC to the site will need to be within 400 linear ft. of a fire hydrant according to Fire Prevention.

Due to the Very High Fire Hazard Severity Zone (Zone 4) that the Pitchess site falls within, special construction for exterior materials is required. Both eaves and exterior siding need to be non-combustible material, along with a Class A roof rating. State certification of modular buildings is needed for compliance. The construction of the existing modular buildings at the Pomona EVOC has not been verified for its compliance within a Very High Fire Hazard Severity Zone (Zone 4), and it is possible that retrofitting these modular buildings with non-combustible materials will be required.

The Role Play Village configuration and location were discussed. Fire Prevention pointed out that response access would not be necessary if the structures were less than 1,000 square feet each, and spaced more than 20 feet apart. Reducing the size of these proposed structures to 600 square feet each as shown on the proposed layout would allow flexibility in locating them without having to accommodate access provisions such as fire truck turnaround space and paved driving surfaces designed for fire trucks.

### **c. Regional Planning Meeting**

County DPW and the Design Team met with County of Los Angeles Regional Planning to gather Parcel Profile Report information. A Parcel Profile Report is included in the Appendix section of this report.

### **Zoning**

Per the Los Angeles County, California, Code of Ordinances, Chapter 22.24 Planning and Zoning, the site's zone is indicated as an A-2-5, classified as Heavy Agricultural Zone. Uses within the A-2-5 zone include animal hospitals, dairies, dog kennels, livestock, feed lots, manure spreading, and oil wells. Chapter 22.24 also allows for correctional institutions, including jails, farms, and camps, provided that a Conditional Use Permit is obtained. For this reason, the proposed EVOC would be subject to a site plan review by the County of Los Angeles Regional Planning Department, and would require a CUP.

The project is within the Santa Clarita Valley Area Plan, which promotes rural, low density development and compatibility with the neighboring communities and existing site features. The proposed EVOC project does not appear to conflict with the Guidelines established for this Area Plan.

A Castaic Area Community Standards District also applies to the proposed EVOC project site. The purpose of the Castaic Area CSD is to ensure that new development will be compatible with the Castaic area's existing rural neighborhoods and with the goals of the Santa Clarita Valley Area Plan.

## **6. Existing Site Utilities**

A number of existing utility lines are present on the proposed site. A 10" water line running east/west is located just south of Batch Plant Road. Existing wooden power poles run diagonally across the southeast corner of the proposed site, and are adjacent to the security fence enclosure at the northwest corner of the visitor parking area. Gas lines along the western edge of the detention center visitor parking area also occur along the southern edge of the drainage channel, and continue to run along the eastern edge of the site parallel to Biscailuz Drive. Inverts for the existing gas lines have not been determined, however only surface improvements to the site are planned to occur over these areas.

## C. CONCEPTUAL DESIGN STUDY

### 1. Proposed Layout Studies

#### a. Pomona EVOC Comparisons

A study was performed by the Design Team which utilized the existing Pomona EVOC as the basis for a revised layout on the site. The study took the existing Pomona EVOC and compared it to the Concept Layout provided to the design team by LASD. Significant changes in scale were noticed between the existing Pomona EVOC and the proposed Concept Layout. These comparison exhibits demonstrated that areas of track on the Pitchess Concept Layout were smaller in size when compared to Pomona EVOC components.

- The City Street Simulation area shown is roughly about 2/3rds the size of the existing Pomona EVOC City Street Simulation area. The Pomona EVOC City Street Simulation area is too large to fit within the site boundary.
- The hairpin turn incorporates the same turning radii as Pomona's EVOC, but the lengths of the straightaway areas have been modified to fit on the site. A 100' safety runoff area occurs around the hairpin turn.

#### b. Preliminary Pitchess EVOC Layouts

Six layout concepts were performed by the Design Team, and sent to the County. The following are summaries for each layout scheme:

##### Scheme 1

- Scheme 1 places all of the program components on the site (Track, Role Play Village, surface parking and modular buildings).
- Places the Hairpin Turn between existing power poles along Batch Plant Rd. The track placement locates the existing power poles more than 40' from the track edge within the compacted soil safety runoff zones.
- Existing power poles along the southeast corner of the site fall within safety runoff zones for the City Simulation area.
- This option does not impact the existing detention visitor parking area.

##### Scheme 2

- Scheme 2 places the modular buildings within the existing detention visitor parking area. The 107 total parking spaces associated with the EVOC is shared with the existing visitor parking area, eliminating the need to construct new parking on the site. LASD and DPW to confirm that utilizing the existing detention visitor parking is acceptable.
- The Hairpin Turn is placed between existing power poles along Batch Plant Rd. The track placement locates the existing power poles more than 40' from the track edge within the compacted soil safety runoff zones.
- Existing power poles along the southeast corner of the site occur closer than 40' to the City Simulation track area.

### Scheme 3

- Scheme 3 places both the modular buildings and Role Play Village within the existing detention visitor parking area. A chain link fence enclosure separates the Role Play Village and modular buildings from the detention visitor parking.
- An access road connects the EVOC track and Role Play Village. This access road straddles the existing east west drainage channel south of the track area. The access road would need to be built up at the drainage channel in order to allow a boxed culvert to occur beneath it for maintaining site drainage. Existing gas lines along the northwest side of the existing detention visitor parking occur, however the design team does not have specific survey info on these existing gas lines such as inverts, etc.
- A gate on the northwest side of the detention visitor parking area allows vehicle access to the Role Play Village enclosure.
- Existing power poles along the southeast corner of the site fall within safety runoff zones for the City Simulation area.

### Scheme 4

- Scheme 4 places all of the program components on the site (Track, Role Play Village, surface parking and modular buildings).
- Places the Hairpin Turn between existing power poles along Batch Plant Rd. The track placement locates the existing power poles more than 40' from the track edge within the compacted soil safety runoff zones.
- The Skid Pad is shown located east of the high speed track area to allow stormwater infiltration into the middle of the site.
- Existing power poles along the southeast corner of the site fall within safety runoff zones for the City Simulation area.
- This option does not impact the existing detention visitor parking area.
- Surface parking and modular buildings are placed north of Batch Plant Road.

### Scheme 5

- Placement of Role Play Village on the north end of the site, with direct access from both the modular building area as well as the high speed track. A 20' wide direct access road from the modular building/parking area is shown per LASD request.
- Relocation of existing power poles at the southeast corner of the site to avoid conflicts with the City Simulation area.
- The Skid Pad is located outside of the high speed track area, leaving the interior track area available for stormwater management.
- Collision Avoidance has been located 40' or more from the edge of the track to allow for simultaneous use.
- The power poles along Batch Plant Rd. are shown about 55' from the edge of the asphalt track at the closest condition.

### Scheme 6A



- The Hairpin Turn has been located south of Batch Plant Rd. to avoid the existing power poles. Because of the site constraints of the drainage channel to the south and Batch Plant Rd. to the north, the EVOC track resulted in a 460' reduction in overall track length.
- The Hairpin Turn shown is the same configuration as the current Pomona Fairplex EVOC.
- In order to maximize the EVOC track length and avoid current power pole locations, the City Simulation area is shown rotated so that it is parallel to the existing drainage channel along the south edge of the site. This places the existing power poles within neutral areas of City Simulation and outside the safety runoff zones. It also affects an existing large oak tree to the south of the site, which will have to be removed for this layout. If the City Simulation area is rotated to avoid the existing oak tree, it will shorten the EVOC track length by approximately 80' and require relocating the southern existing power poles.
- Collision Avoidance is shown located away from the edge of track by 40' at the nearest location, and 72' away from the track at the furthest location.
- Both the modular classroom buildings and Role Play Village are shown in the existing detention visitor parking area. A fenced enclosure to separate these components from the rest of the detention visitor parking area is shown. Keep in mind that the existing Motorcycle Training occurs in this location, and will need to be relocated. As mentioned in last week's meeting, this will add expense to the project, since the only savings associated with this location is existing ac paving, and some of the existing ac paving will need to be regraded anyways.
- An access road from the EVOC track to Role Play Village is shown. Keep in mind that this access road occurs over an existing drainage channel, and will have to be elevated. A boxed culvert will also need to be added in order to allow the drainage channel to function beneath the elevated access road. Both the elevated access road and boxed culvert will add expense to the project when compared to locating Role Play Village and modular classroom buildings on the proposed site. The fenced enclosure will also permanently limit the capacity of the existing detention visitor parking area, as discussed in last week's meeting. Existing gas lines near the western edge of the visitor parking area may be impacted with this configuration; invert and other information on these existing gas lines is not available.

#### Scheme 6B

- Modular classroom buildings and parking are shown north of Batch Plant Rd. Parking access would occur from Batch Plant Rd.
- Role Play Village is shown connected to the EVOC track, north of the existing 10" water line. This location eliminates the fenced enclosure, elevated access road, and boxed culvert needed when locating it in the detention visitor parking area.

As a result of DPW and LASD reviewing the various layout concepts, it was agreed upon that Scheme 6A would be the basis for developing the associated cost estimate.

## **2. Low Impact Development**

LID is being applied to this project per LA County LID Standards Manual (February 2014). Per LA County LID manual, project must retain 100 percent of the stormwater quality design volume (SWQDV) on-site through infiltration, evapotranspiration, stormwater runoff harvest and use, or a combination.

The SWQDv is defined as the greater of:

- The 0.75-inch, 24-hour rain event; or
- The 85th percentile, 24-hour rain event as determined from the Los Angeles County 85th percentile precipitation isohyetal map.

On this project, 85th percentile precipitation which is 1 inch was used to calculate the SWQDv and design BMPs for this project.

Only new improvements are considered for LID calculations which are bounded to the Batch Plant Road on the north, Biscailuz Drive on the east, Dirt road on the west and an existing drainage ditch to the south. Proposed Rolle-Play Village and Classroom/Office building and the parking area are located south of the existing dirt ditch.

The project will receive Stormwater runoff coming from the adjacent areas sloping toward the new improvements. The offsite tributary areas are considered in the hydraulic design but are not considered as part of the LID calculations. The project site included in LID calculations, consist of approximately 34.55 acres with approximately 65 percent imperviousness which will produce 77,118 CF of volume based on the 85th percentile rainfall event. The stormwater quality design volume was calculated using the LACDPW HydroCalc Calculator.

The project site will utilize a Bioretention infiltration BMP. A bioretention area is a shallow depression that is designed to receive, retain, and infiltrate stormwater runoff from adjoining paved areas. A shallow ponding zone is provided above the finish surface for temporary storage of stormwater runoff. During storm events, stormwater runoff accumulates in the ponding zone and gradually infiltrates and filters through the bioretention top layer, before infiltrating the underlying soil. The infiltration BMP has been designed according to the requirements in LA County LID Standards Manual (Sizing guidelines for RET-1). Bioretention areas were designed with maximum six inches of ponding depth which will let the 85<sup>th</sup> percentile rainfall volume infiltrate within a 96 hours period. Overflow devices have been designed in all Bioretention areas to collect the excess water from storm events greater than the 1 inch rainfall event. Considering the 6 inch ponding depth, the total of 154,500 SF of bioretention area is required to mitigate 77,118 CF of volume produced by 1 inch storm event. Three major tributary areas are designed to mitigate the stormwater quality design volume. The biggest Bioretention area which is surrounded by the track is about 105,000 SF which will treat the runoff received from the onsite and offsite tributary areas. The volume received from the offsite tributary areas will be treated in lieu of the runoff produced by the city simulation area which is not draining toward any bioretention area. City simulation area will follow the existing drainage pattern and will sheet flow toward the south of the project and will be collected by the designed catch basins located north of the dirt ditch. Second designed bioretention area is about 38,000 SF and is located on the east side of the project going up along with the Biscailuz Drive, bounded on north to the Skid Pad. This bioretention area will also treat the water received from the offsite tributary area in substitute of the volume produced by the Rolle-Play Village and the proposed Classroom which are located south of the project and will not sheet flow toward any Bioretention area. Third BMP area is about 11,500 SF and is located south west of the project, south of the collision avoidance area.

The excess water collected by overflow devices will drain to a designed concrete channel south of the project site which will convey the water to the local creek.

### **3. Site Drainage**

Site drainage system includes concrete channels, box culverts, carrier pipes, drainage inlets and overflow devices.

The 50-year event hydraulic analysis was performed using the LACDPW HydroCalc Calculator. Manning's Equation was used to determine the velocity and flow capacities of the pipe. The Orifice Equation and Weir Equation were used to size new catch basins.

The preliminary pipe design was based on a Manning's roughness coefficient of 0.011, with a minimum slope of 0.50%, and flowing at 75% capacity. Storm drain pipe sizes vary from 10 to 36 inches throughout the project.

#### **4. Grading**

##### **Proposed Conceptual Condition**

Based on the proposed conceptual grading design, the site will mimic the existing grading pattern. The track and site improvements have been designed to slope from northeast to southwest. This will allow the proposed track to be at the same plane or similar planes to create one uniform track system. Directional slope along the track paths range from 0.28 to 4.8 percent with an average of 3-3.5% cross slopes. As the track traverses in the east to west direction, the directional slopes range from 0.28 to 4.8 but have 0-2% cross slopes. In dirt areas located in the infield of the track, the slope varies from 2.5 to 7.5 with an average of 5 percent. These slopes are typically located within the bio-retention areas. The track and site improvements have been graded to sheet flow towards the bio-retentions areas. In some cases such as the City simulation area, the track has been graded to sheet flow to low spots that have been located away from the path of vehicle traffic and within acceptable safe zones. The grading exercise that was performed for this estimate is considered conceptual and shall only be used for estimating purposes. The final grading shall be developed as the project is further developed.

#### **5. Soil Conditions**

The asphalt pavement sections were developed using the recommendations of the Soil's report. It is anticipated that the track will experience unusual breaking and acceleration demands that can lead to rutting or deformation of the pavement section. The track will also experience heavy vehicle loads and traffic volumes greater than those of a normal roadway. A traffic index of 7 was chosen for the track pavement design section. A typical pavement section of 4 inches of asphalt over 13 ½ inches of base material was chosen to accommodate the track demands. The soils report also recommends at a minimum, that the upper 12 inches of paving subgrade be scarified, and moisture conditioned to optimum moisture content. The subgrade shall then be compacted to at least 95% relative compaction.

#### **D. COST ESTIMATE**

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The following pages include our cost estimate and are subset to page 18, i.e., 18.1, 18.2, 18.3, etc.



**Lenax**  
Construction  
Services Inc.

*prepared for:*


**LA COUNTY DEPARTMENT OF PUBLIC WORKS**

**Independent Construction Cost Estimate**

**ROM - CONSTRUCTION COST ESTIMATE**

**LADPW**

**Pitchess Detention Center  
EVOC (Base Scheme) New Site**



**Estimating  
Cost Analysis  
CPM Scheduling  
Claims Management  
Construction Progress**

**February 2, 2016**

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February 2, 2016

LADPW

**Pitchess Detention Center  
EVOC (Base Scheme) New Site**

**ROM - CONSTRUCTION COST ESTIMATE**

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*Estimating  
Cost Analysis  
CPM Scheduling  
Claims Management  
Construction Progress*

**Lenax**



Estimating  
Cost Control  
Claims Management  
Construction Management

Our goal is simple... to help you reach yours.

February 2, 2016

Craig Biggi, LEED AP BD+C

**GRUENASSOCIATES**

Principal Associate

Architecture Planning Interiors Landscape

6330 San Vicente Boulevard, Suite 200

Los Angeles, CA 90048

*Subject: Cost Estimating Services*  
**LADPW**  
**EVOC (Base Scheme) New Site**  
**ROM - CONSTRUCTION COST ESTIMATE**

Dear. Mr. Biggi,

Enclosed is for your information and review the ROM Project Budget Cost Estimate for the above-referenced project.

Very truly yours,

**LENAX CONSTRUCTION SERVICES, INC.**

A handwritten signature in black ink, appearing to read "George Elkin".

George Elkin, CPE  
Senior Cost Estimator

Reviewed by:

A handwritten signature in black ink, appearing to read "Oleg Zeetser".

Oleg Zeetser, CPE  
Director of Engineering

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Page 3 of 17

February 2, 2016

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**LADPW  
Pitchess Detention Center  
EVOC (Base Scheme) New Site  
Independent Estimate of Probable Construction Cost  
ROM - CONSTRUCTION COST ESTIMATE  
ESTIMATE CRITERIA**

**1. SCOPE**

The estimate consists of the anticipated construction cost for the BASE (Dirt Runoff Option) - Driver Training Track 336,544 SF and compacted soil area approx. 521,159 SF; Skid pad - 92,276 SF of 6" thick concrete pavement, parking area approx. 10,350 SF. The project also include the road work over channel approx. 24,647 SF. The other improvement includes constructing the sewer line connection, utility systems and role play village simulation. Overall site work include the grading, lighting, storm drainage, relocation of the existing and constructing of new site utilities, and other site improvements. EVOC project is located at Pitchess Detention Center in Castaic, California. The Base Project gross site area is approximately 984,976 SF or 24 acres.

**2. DRAWINGS**

The estimate is based on set of revised drawings prepared By Gruen and Associates, dated January 19, 2016

**3. ESTIMATE FORMAT**

This estimate is presented in scope unit cost break down and report costs at the major items at component level.

**4. QUANTITIES**

All scope is quantified for each building trade or system from the documented information. In the event that information is not fully complete, we have used our professional knowledge of technical building systems to allocate proper allowances and contingencies.

**5. SOURCES FOR PRICING**

The estimated cost information was derived from the several industry accepted data base sources trade publications, such as R.S. Means, BNI Building News ant etc. In addition, quotes from vendors, and pricing based on communication with subcontractors and tradesmen in the industry have been used. These sources were used as a basis along with the estimator's professional judgment to adjust for this specific project type, location, size, and complexity.

## *Estimate Criteria*

LADPW

Pitchess Detention Center EVOC (Base Scheme) New Site

ROM - CONSTRUCTION COST ESTIMATE

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### **6. CONTRACT PROCUREMENT AND MARK-UPS**

The Construction contract procurement method is Design-Bid-Build. The mark-up structure used in this estimate for the general contractor reflects similar percentages used in Lenax's estimate of the previous similar projects. This includes 12% for General Conditions / General Requirements and 6% for GC fee, 2% for bonds.

### **7. DESIGN CONTINGENCY**

An allowance of 10% for sitework/buildings is included in this cost estimate for Design Contingency (or Pre-Construction Design Development). (Design Contingency is not related to Construction Contingency. See construction contingency for further information.)

### **8. CONSTRUCTION SCHEDULE / ESCALATION**

This estimate is based on a 24 Month Design/Bid/Build Schedule, assuming the design phase is 8 and construction phase 12 months. An allowance for Escalation to the Mid-Point of Construction has been included @ 3 % per year of the construction cost subtotal, which yields 6.09%.

### **9. SOFT COST**

- 1 Professional design and consulting fees are allowed at 8%.
- 2 Construction Management, field inspection and testing are allowed at 8% .
- 3 LADPW Administration is allowed at 2% .
- 4 Plan check fees, project permits and development fees are allowed at 0.86%
- 5 Construction contingency is allowed at 5% .

### **10. SPECIFIC EXCLUSIONS**

- 1 Furnishings, fixtures and equipment (FF&E)/Group II, unless listed otherwise
- 2 Owner-furnished items.
- 3 Move-in costs or maintenance costs after move-in.
- 4 Financing and carry costs .
- 5 Hazardous Material Abatement in existing structures or soil.

### **11. POTENTIAL VARIANCES FROM THIS COST ESTIMATE**

The following items could affect the construction cost and, therefore, could be the cause of a variance from this estimate of probable cost.


- 1 Modifications to the scope of work included in the drawings and/or specifications used as a basis for this estimate.
- 2 Restrictive technical specifications or excessive or unpredictable contract conditions.
- 3 Any specified item of equipment, material, or product that cannot be obtained from at least three different source.
- 4 Bid procurement other than listed and assumed by this estimate.
- 5 Bids delayed beyond the projected schedule.
- 6 Construction schedule before or after the schedule used in this estimate.

### **12. ASSUMPTIONS MADE IN COST ESTIMATE**

- 1 The site will be fully accessible during normal working hours.
- 2 No phasing will be required that involve additional mobilization.
- 3 Construction contract procurement method is Open Bid Contract.
- 4 Prevailing Wage Structure.

Lenax Construction Services staff of professional cost consultants has prepared this estimate with principles and practices coinciding with the cannons and code of ethics of the American Society of Professional Estimators. This staff is available to discuss its content to any interested party.

## Estimate Summaries



*Estimating  
Cost Analysis  
CPM Scheduling  
Claims Management  
Construction Progress*

**Lenax**



Owner: LADPW  
Architect: GRUENASSOCIATES  
Estimator: Lenax Construction Service, Inc.  
Project: EVOC (Base Scheme) New Site  
Project No.:  
Design Level: ROM - CONSTRUCTION COST ESTIMATE



## SUMMARY Comparison EVOC (Base Scheme) New Site

2/2/2016

DESCRIPTION		QUANTITY	UNIT COST	COST
I.	<b><u>EVOC (Base) Dirt Runoff Option</u></b>			<b>984,976 SF</b>
01	Driver training track (including Collision Avoidance Area)	857,703 SF	\$3.58	\$3,073,898
02	Skid Pad (6"concrete)	92,276 SF	\$14.34	\$1,322,819
03	Road Work over channel	24,647 SF	\$6.80	\$167,600
04	Parking Lot Re-paving - Due to (P) Bldgs	10,350 SF	\$10.24	\$105,937
05	Relocation of Modular Buildings from Fairground_ EVOC	5,000 SF	\$40.00	\$200,000
06	Role Play Village	2,400 SF	\$54.71	\$131,315
07	Earthwork	51,197 CY	\$14.18	\$726,149
<b>SUB-TOTAL DIRECT COST- BASE</b>		<b>984,976</b>	<b>SF \$5.82</b>	<b>\$5,727,719</b>
	DESIGN CONTINGENCY	10.00%		\$572,772
	GENERAL REQUIREMENTS, OVERHEAD, GC FEE, BOND, & INSURANCE	20.00%		\$1,260,098
	<b>GC SUB-TOTAL</b>			<b>\$7,560,589</b>
	ESCALATION (3% PER YEARS FOR 2 YEARS)	6.09%		\$460,440
<b>TOTAL ESTIMATED CONSTRUCTION COST - BASE</b>		<b>984,976</b>	<b>SF \$8.14</b>	<b>\$8,021,029</b>
	DESIGN/ENGINEERING	8.00%		\$641,682
	CONSTRUCTION MANAGEMENT	8.00%		\$641,682
	LADPW ADMINISTRATION	2.00%		\$160,421
	PERMITS	0.86%		\$68,981
	PROJECT CONTINGENCY	5.00%		\$401,051
I.	<b>TOTAL ESTIMATED BUDGET COST- BASE PROJECT</b>	<b>984,976</b>	<b>SF \$10.09</b>	<b>\$9,934,846</b>

Owner: LADPW  
 Architect: GRUENASSOCIATES  
 Estimator: Lenax Construction Service, Inc.  
 Project: EVOC (Base Scheme) New Site  
 Project No.:  
 Design Level: ROM - CONSTRUCTION COST ESTIMATE



## SUMMARY Comparison EVOC (Base Scheme) New Site

2/2/2016

DESCRIPTION		QUANTITY	UNIT	COST	COST
<b>II. Total Miscellaneous Scope - LID/CEQA</b>					
Miscellaneous Scope Items					
08	Storm Drain System	1	LS	\$14.18	\$1,748,272
	Bio-Retention Ponds	155,000	SF	\$5.00	\$775,000
09	Electrical light poles	8	EA	\$4,000	\$32,000
10	Utility Systems (Skid pad)	1	LS		\$138,088
11	Utility Systems	1	LS		\$181,440
<b>SUB-TOTAL DIRECT COST</b>		<b>984,976</b>	<b>SF</b>	<b>\$2.92</b>	<b>\$2,874,800</b>
	DESIGN CONTINGENCY	10.00%			\$287,480
	GENERAL REQUIREMENTS, OVERHEAD, GC FEE, BOND, & INSURANCE	20.00%			\$632,456
	<b>GC SUB-TOTAL</b>				<b>\$3,794,736</b>
	ESCALATION (3% PER YEARS FOR 2 YEARS)	6.09%			\$231,099
<b>TOTAL ESTIMATED CONSTRUCTION COST - (LID/CEQA)</b>		<b>984,976</b>	<b>SF</b>	<b>\$4.09</b>	<b>\$4,025,836</b>
	DESIGN/ENGINEERING	8.00%			\$322,067
	CONSTRUCTION MANAGEMENT	8.00%			\$322,067
	LADPW ADMINISTRATION	2.00%			\$80,517
	PERMITS	0.86%			\$34,622
	PROJECT CONTINGENCY	5.00%			\$201,292
<b>II.</b>	<b>TOTAL ESTIMATED PROJECT BUDGET COST -(LID/CEQA)</b>	<b>984,976</b>	<b>SF</b>	<b>\$5.06</b>	<b>\$4,986,400</b>
<b>I+II=III</b>	<b>TOTAL ESTIMATED PROJECT BUDGET</b>	<b>984,976</b>	<b>SF</b>	<b>\$15.15</b>	<b>\$14,921,246</b>

Owner: LADPW  
 Architect: GRUENASSOCIATES  
 Estimator: Lenax Construction Service, Inc.  
 Project: EVOC (Base Scheme) New Site  
 Project No.:  
 Design Level: ROM - CONSTRUCTION COST ESTIMATE



## SUMMARY Comparison EVOC (Base Scheme) New Site

2/2/2016

DESCRIPTION		QUANTITY	UNIT COST	COST
<b>OPTION 1 - Skid Pad – 92,276 SF AC in lieu of CONCRETE- Credit</b>				<b>(\$1,423,920)</b>
2) AC Skid Pad – 92,276 SF		92,276 SF		\$1,110,053
2" C2-PG-64-10		92,276 SF		
2" B-PG-64-10		92,276 SF		
13.5" Crushed Miscellaneous Base, (CMB)		92,276 SF		
12" Subgrade Preparation (Scarified & Recompact)		92,276 SF		
Swale/V-Gutter connect to proper drainage system - Allow		2,500 SF		
10) Utility Systems (Skid pad)				N/A
2) Concrete Skid Pad – 92,276 SF		(92,276) SF		(\$2,294,457)
12" Reinforced Concrete to 6" non reinforced Concrete		(92,276) SF		
12" Crushed Miscellaneous Base, (CMB)		(92,276) SF		
12" Subgrade Preparation (Scarified & Recompact)		(92,276) SF		
Swale/V-Gutter connect to proper drainage system - Allow		(2,500) SF		
Water collection system and recycling system		(1) LS		
10) Utility Systems (Skid pad) Concrete		1 LS		(\$239,516)
12" Fire Water Line		(485) LF		
12" Backflow Device for Fire		(1) EA		
12" Water Service Meter for Fire & POC		(1) EA		
Fire Hydrant		(2) EA		
Thrust Blocks		(3) EA		
6" Sewer Line		(354) LF		
6" Sewer clean-outs		(3) EA		
Sewer Manholes (5" Dia)		(1) EA		
<b>OPTION 2 - DELETE Roadway over Channel - Credit</b>				<b>(\$379,572)</b>
3.) Road Work over channel		(24,647) SF	See Detail ROM Cost Pages 14	
2" C2-PG-64-10		(24,647) SF		
2" B-PG-64-10		(24,647) SF		
13.5" Crushed Miscellaneous Base, (CMB)		(24,647) SF		
12" Subgrade Preparation (Scarified & Recompact)		(24,647) SF		
8.a) Storm Drain System				
4'x6' Concrete Box Culvert per Caltrans Std plan D80, T1= 8", T2=7",T3=8"		(45) LF		
12" Wide Wingwalls Type "B", per Caltrans Std plan D84, H=11'		(183) LF		
Pipe Culvert Headwall per Caltrans Std Plan D86B		(1) EA		
IV=III- Opt.1- Opt.2	<b>TOTAL ESTIMATED PROJECT BUDGET w/ALL OPTIONS</b>		960,329 SF \$13.32	<b>\$13,117,753</b>

# Estimate Detail

*Estimating*  
*Cost Analysis*  
*CPM Scheduling*  
*Claims Management*  
*Construction Progress*

**Lenax**

# EVOC – Pitchess Detention Center – New Site Layout

## ROM ESTIMATE Cost Comparison

Dec 02/2016

SCOPE Description	Quantity	Unit Cost	Direct Cost	Design Contingency	GC Markup	Excavation	Sub Cost	Project Contingency	Unit Cost w/ Markups	TOTAL w/ Markups	SUBTOTAL COST W/ Markups
				15%	25%	50%	10.00%	10%			
1.) Driver training track	657,703 SF	\$3.58	\$3,073,898								\$5,331,740
2" C2-PG-64-10	336,544 SF	\$1.70	\$572,125	\$57,212	\$125,867	\$45,992	\$151,106	\$40,080	\$2.95	\$992,362	
2" B-PG-64-10	336,544 SF	\$1.60	\$538,470	\$53,847	\$118,463	\$43,287	\$142,217	\$37,703	\$2.78	\$933,968	
13 5" Crushed Miscellaneous Base (CMB)	336,544 SF	\$2.70	\$908,669	\$90,867	\$199,907	\$73,046	\$239,991	\$63,624	\$4.68	\$1,576,105	
12" Subgrade Preparation (Scarified & Recompact)	336,544 SF	\$0.80	\$269,235	\$26,924	\$59,232	\$21,643	\$71,109	\$18,852	\$1.39	\$469,994	
Swale/V-Gutter connect to proper drainage system - Allow	33,654 SF	\$5.00	\$166,272	\$16,627	\$37,029	\$13,527	\$44,443	\$11,782	\$8.67	\$291,871	
Runoff 12" Subgrade Preparation Soil (Scarified & Recompact)	521,169 SF	\$0.80	\$416,927	\$41,693	\$91,724	\$33,516	\$110,116	\$29,193	\$1.39	\$722,169	
Utility Protection Allow	7,000 LF	\$10.00	\$70,000	\$7,000	\$15,400	\$5,627	\$18,488	\$4,901	\$17.35	\$121,416	
K-Rail											
Concrete K-rail	1,880 LF	\$70.00	\$130,200	\$13,020	\$28,644	\$10,467	\$34,368	\$9,117	\$121	\$225,835	
2.) Skid Pad – 92,276 SF	92,276 SF	\$14.34	\$1,322,819								\$2,294,457
6" Non Reinforced Concrete	92,276 SF	\$8.00	\$553,656	\$55,366	\$121,804	\$44,507	\$146,228	\$38,767	\$10.41	\$960,328	
12" Crushed Miscellaneous Base (CMB)	92,276 SF	\$2.40	\$221,462	\$22,146	\$48,722	\$17,803	\$58,491	\$15,507	\$4.16	\$384,131	
12" Subgrade Preparation (Scarified & Recompact)	92,276 SF	\$0.80	\$73,821	\$7,382	\$16,241	\$5,934	\$19,497	\$5,169	\$1.39	\$128,044	
Swale/V-Gutter connect to proper drainage system - Allow	2,500 SF	\$5.00	\$12,500	\$1,250	\$2,750	\$1,005	\$3,301	\$875	\$8.67	\$21,682	
Water collection system and recycling system	1 LS	\$461,380	\$461,380	\$46,138	\$101,504	\$37,089	\$121,857	\$32,306	\$800.273	\$800,273	
3.) Road Work over channel	24,647 SF	\$6.88	\$167,666								\$290,705
2" C2-PG-64-10	24,647 SF	\$1.70	\$41,900	\$4,190	\$9,218	\$3,368	\$11,088	\$2,934	\$2.95	\$72,676	
2" B-PG-64-10	24,647 SF	\$1.60	\$39,435	\$3,944	\$8,676	\$3,170	\$10,415	\$2,761	\$2.78	\$68,401	
13 5" Crushed Miscellaneous Base (CMB)	24,647 SF	\$2.70	\$66,547	\$6,655	\$14,840	\$5,350	\$17,576	\$4,680	\$4.68	\$115,427	
12" Subgrade Preparation (Scarified & Recompact)	24,647 SF	\$0.80	\$19,718	\$1,972	\$4,338	\$1,585	\$5,208	\$1,381	\$1.39	\$34,201	
4.) Parking Lot Re-paving - Due to (P) Bldgs	10,350 SF	\$10.24	\$105,937								\$183,750
2" C2-PG-64-10	10,350 SF	\$1.70	\$17,595	\$1,760	\$3,871	\$1,414	\$4,647	\$1,232	\$2.95	\$30,519	
2" B-PG-64-10	10,350 SF	\$1.60	\$16,560	\$1,656	\$3,643	\$1,331	\$4,374	\$1,160	\$2.78	\$28,724	
13 5" Crushed Miscellaneous Base (CMB)	10,350 SF	\$2.70	\$27,945	\$2,795	\$6,148	\$2,246	\$7,381	\$1,957	\$4.68	\$48,471	
12" Subgrade Preparation (Scarified & Recompact)	10,350 SF	\$0.80	\$8,280	\$828	\$1,822	\$666	\$2,187	\$590	\$1.39	\$14,362	
10' high chain link security fence	627 LF	\$41.08	\$25,757	\$2,576	\$5,667	\$2,071	\$6,803	\$1,804	\$71.25	\$44,676	
24' sliding gate	1 EA	\$5,000.00	\$5,000	\$500	\$1,100	\$402	\$1,321	\$350	\$8,673	\$8,673	
3' wide Pedestrian gates	4 EA	\$1,200.00	\$4,800	\$480	\$1,056	\$386	\$1,268	\$336	\$2,081	\$6,326	
5.) Relocation of Modular Buildings from Fairground, EVOC	5,000 SF	\$40.00	\$200,000								\$346,904
Rigging contractor to remove and transport existing Modular building	5,000 SF	\$15.00	\$75,000	\$7,500	\$16,500	\$6,029	\$19,808	\$5,251	\$26.02	\$130,089	
Re-install modular building on new location	5,000 SF	\$25.00	\$125,000	\$12,500	\$27,500	\$10,049	\$33,014	\$8,752	\$43.36	\$216,815	
6.) Role Play Village	2,400 SF	\$54.71	\$131,315								\$227,769



**EVOC – Pitchess Detention Center – New Site Layout**  
**ROM ESTIMATE**  
**Cost Comparison**  
**Drawn 2/2/2016**

SCOPE Description	Quantity	Unit Cost	Direct Cost	Design Contingency	GC Markup	Excavation	Sub Cost	Permit Contingency	Unit Cost w/ Markups	TOTAL w/ Markups	SUBTOTAL COST w/ Markups
				10%	20%	0.00%	10.00%	5.00%			
Four (4) units type V building with – 600 SF (each) – large entry/living and two rooms	2,400 SF	\$50.00	\$120,000	\$12,000	\$26,400	\$0,847	\$31,894	\$8,402	\$88.73	\$208,142	
6" Reinforced Concrete pavement	1,864 SF	\$8.00	\$9,964	\$998	\$2,196	\$803	\$2,837	\$699	\$10.41	\$17,317	
4" Crushed Miscellaneous Base, (CMB)	1,864 SF	\$0.80	\$1,331	\$133	\$293	\$107	\$352	\$93	\$1.39	\$2,309	
<b>7.) Earthwork</b>	<b>51,197 CY</b>	<b>\$14.18</b>	<b>\$726,149</b>								<b>\$1,259,521</b>
Area of Grading	1,566,949 SF	\$0.25	\$391,737	\$39,174	\$86,182	\$31,491	\$103,463	\$27,429	\$0.43	\$679,476	
Fill	27,275 CY	\$3.00	\$81,825	\$8,183	\$18,002	\$6,578	\$21,611	\$5,729	\$5.20	\$141,927	
Cut	27,284 CY	\$4.00	\$109,136	\$10,914	\$24,010	\$8,773	\$28,824	\$7,642	\$6.94	\$199,299	
Cut (Due to pavement sections)	23,904 CY	\$3.00	\$71,712	\$7,171	\$15,777	\$5,785	\$18,940	\$5,021	\$5.20	\$124,386	
Net Cut	23,913 CY	\$3.00	\$71,739	\$7,174	\$15,783	\$5,787	\$18,947	\$5,023	\$5.20	\$124,433	
<b>TOTAL ESTIMATED BUDGET COST- BASE PROJECT</b>	<b>984,976 SF</b>	<b>\$5.82</b>	<b>\$5,727,719</b>	<b>\$572,772</b>	<b>\$1,260,098</b>	<b>\$460,440</b>	<b>\$1,512,766</b>	<b>\$401,051</b>	<b>\$10.09</b>	<b>\$9,934,846</b>	
<b>8.a) Storm Drain System</b>	<b>984,976</b>	<b>\$1.77</b>	<b>\$1,748,272</b>								<b>\$3,032,414</b>
4'x8' Concrete Channel	249 LF	\$510	\$127,021	\$12,702	\$27,945	\$10,211	\$33,548	\$8,894	\$885	\$220,320	
4'x8' Concrete Box Culvert per Caltrans Std plan D80, T1= 6", T2=7", T3=8"	45 LF	\$580	\$26,148	\$2,615	\$5,752	\$2,102	\$6,908	\$1,831	\$1,008	\$45,351	
12" Wide Wingwalls Type "B", per Caltrans Std plan D84, H=11"	183 LF	\$110	\$20,088	\$2,009	\$4,419	\$1,615	\$5,308	\$1,407	\$191	\$34,843	
Cement Lined Riser - Cobblestone	11,139 SF	\$20	\$222,779	\$22,278	\$49,011	\$17,909	\$58,839	\$15,599	\$35	\$386,415	
Pipe Culvert Headwall per Caltrans Std Plan D86B	1 EA	\$5,000	\$5,000	\$500	\$1,100	\$402	\$1,321	\$350	\$8,673	\$8,673	
12" Diameter Pipe	653 LF	\$175	\$114,275	\$11,428	\$25,141	\$9,186	\$30,182	\$8,001	\$304	\$198,212	
15" Diameter Pipe	1,073 LF	\$180	\$193,140	\$19,314	\$42,491	\$15,526	\$51,011	\$13,524	\$312	\$335,005	
18" Diameter Pipe	963 LF	\$185	\$178,155	\$17,816	\$39,194	\$14,322	\$47,053	\$12,474	\$321	\$309,014	
21" Diameter Pipe	355 LF	\$212	\$75,260	\$7,526	\$16,557	\$6,050	\$19,877	\$5,270	\$368	\$130,540	
24" Diameter Pipe	474 LF	\$222	\$105,228	\$10,523	\$23,150	\$8,459	\$27,792	\$7,368	\$385	\$182,520	
30" Diameter Pipe	931 LF	\$260	\$242,060	\$24,206	\$53,253	\$19,459	\$63,931	\$16,949	\$451	\$419,858	
36" Diameter Pipe	356 LF	\$290	\$103,240	\$10,324	\$22,713	\$8,299	\$27,267	\$7,229	\$503	\$179,072	
40" Diameter Pipe	590 LF	\$300	\$177,000	\$17,700	\$38,940	\$14,229	\$48,748	\$12,393	\$520	\$307,010	
42" Diameter Pipe	334 LF	\$320	\$106,880	\$10,688	\$23,514	\$8,592	\$28,228	\$7,484	\$555	\$185,386	
36"X36" Catch Basin	26 EA	\$2,000	\$52,000	\$5,200	\$11,440	\$4,180	\$13,734	\$3,641	\$3,469	\$90,195	
			\$775,000								
<b>8.b) 6" Depth Bio-Retention Ponds</b>	<b>155,000 SF</b>	<b>\$5</b>	<b>\$775,000</b>	<b>\$77,500</b>	<b>\$170,500</b>	<b>\$62,301</b>	<b>\$204,688</b>	<b>\$54,265</b>	<b>\$8.67</b>	<b>\$1,344,253</b>	<b>\$1,344,253</b>
<b>9.) Electrical light poles</b>	<b>8 EA</b>	<b>\$4,000.00</b>	<b>\$32,000</b>								<b>\$55,505</b>
Light Pole 70' high with 6 fixtures	0 EA	\$35,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$60,708	\$0	
Light Poles 25 ft tall - Cobra head light (Track)	4 EA	\$4,000	\$16,000	\$1,600	\$3,520	\$1,286	\$4,226	\$1,120	\$6,938	\$27,752	
Light Poles 25 ft tall - Cobra head light (City Simulation)	4 EA	\$4,000	\$16,000	\$1,600	\$3,520	\$1,286	\$4,226	\$1,120	\$6,938	\$27,752	
<b>10.) Utility Systems (Skid pad)</b>	<b>1 LS</b>	<b>\$138,088</b>	<b>\$138,088</b>								<b>\$239,516</b>

Date: 2/2/2016

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**EVOC – Pitchess Detention Center – New Site Layout**  
**ROM ESTIMATE**  
**Cost Comparison**  
**Date: 2/2/2016**

SCOPE Description	Quantity	Unit Cost	Direct Cost	Design Contingency	GC Markup	Excavation	Sub Cost	Finish Contingency	Unit Cost w/ Markups	TOTAL w/ Markups	SUBTOTAL COST w/ Markups
				10%	10%	6.00%	13.50%	3.00%			
<b>TOTAL COST AC SKID PAD</b>	<b>92,276 SF</b>	<b>\$0.94</b>	<b>\$639,976.80</b>	<b>\$63,998</b>	<b>\$140,795</b>	<b>\$51,446</b>	<b>\$169,026</b>	<b>\$44,811</b>	<b>\$12.03</b>	<b>\$1,110,053</b>	
<b>2) Concrete Skid Pad – 92,276 SF</b>	<b>(92,276) SF</b>	<b>\$14.34</b>	<b>-\$1,322,819</b>								<b>(\$2,294,457)</b>
6" non reinforced Concrete	(92,276) SF	\$8.00	-\$553,858	-\$55,386	-\$121,804	-\$44,507	-\$146,228	-\$38,767	\$10.41	-\$900,328	
12" Crushed Miscellaneous Base, (CMB)	(92,276) SF	\$2.40	-\$221,462	-\$22,146	-\$48,722	-\$17,803	-\$58,491	-\$15,507	\$4.16	-\$384,131	
12" Subgrade Preparation (Scarified & Recompact)	(92,276) SF	\$0.80	-\$73,821	-\$7,382	-\$16,241	-\$5,934	-\$19,497	-\$5,169	\$1.39	-\$128,044	
Swale/V-Gutter connect to proper drainage system - Allow	(2,500) SF	\$5.00	-\$12,500	-\$1,250	-\$2,750	-\$1,005	-\$3,301	-\$875	\$6.67	-\$21,682	
Water collection system and recycling system	(1) LS	\$461,380	-\$461,380	-\$46,138	-\$101,504	-\$37,089	-\$121,857	-\$32,306	\$800.273	-\$800,273	
<b>10.) Utility Systems (Skid pad) Concrete</b>	<b>1 LS</b>	<b>-\$138,088</b>	<b>-\$138,088</b>								<b>(\$239,516)</b>
12" Fire Water Line	(485) LF	\$119.00	-\$57,864	-\$5,786	-\$12,688	-\$4,635	-\$15,230	-\$4,038	\$206	-\$100,019	
12" Backflow Device for Fire	(1) EA	\$4,500.00	-\$4,500	-\$450	-\$900	-\$362	-\$1,189	-\$315	\$7,805	-\$7,805	
12" Water Service Meter for Fire & POC	(1) EA	\$5,000.00	-\$5,000	-\$500	-\$1,100	-\$402	-\$1,321	-\$350	\$8,673	-\$8,673	
Fire Hydrant	(2) EA	\$7,500.00	-\$15,000	-\$1,500	-\$3,300	-\$1,205	-\$3,962	-\$1,050	\$13,009	-\$26,018	
Thrust Blocks	(3) EA	\$4,000.00	-\$12,000	-\$1,200	-\$2,640	-\$985	-\$3,169	-\$840	\$6,038	-\$20,814	
6" Sewer Line	(354) LF	\$100.00	-\$35,374	-\$3,537	-\$7,782	-\$2,844	-\$9,343	-\$2,477	\$173	-\$61,357	
6" Sewer clean-outs	(3) EA	\$350.00	-\$1,050	-\$105	-\$231	-\$84	-\$277	-\$74	\$607	-\$1,821	
Sewer Manholes (5' Dia)	(1) EA	\$7,500.00	-\$7,500	-\$750	-\$1,650	-\$503	-\$1,961	-\$525	\$13,009	-\$13,009	
<b>TOTAL COST COCRETE SKID PAD</b>	<b>(92,276) SF</b>	<b>\$15.83</b>	<b>-\$1,460,907.03</b>	<b>-\$146,091</b>	<b>-\$321,400</b>	<b>-\$117,439</b>	<b>-\$385,845</b>	<b>-\$102,292</b>	<b>\$27.46</b>	<b>-\$2,533,973</b>	
<b>OPTION 2 - DELETE Roadway over Channel - Credit</b>											<b>(\$379,572)</b>
<b>3.) Road Work over channel</b>	<b>(24,647) SF</b>	<b>\$6.80</b>	<b>-\$167,800</b>								<b>-\$290,705</b>
2" C2-PG-64-10	(24,647) SF	\$1.70	-\$41,900	-\$4,190	-\$9,218	-\$3,368	-\$11,086	-\$2,934	\$2.95	-\$72,676	
2" B-PG-64-10	(24,647) SF	\$1.60	-\$39,435	-\$3,944	-\$8,676	-\$3,170	-\$10,415	-\$2,761	\$2.78	-\$68,401	
13.5" Crushed Miscellaneous Base, (CMB)	(24,647) SF	\$2.70	-\$66,547	-\$6,655	-\$14,640	-\$5,350	-\$17,576	-\$4,680	\$4.68	-\$115,427	
12" Subgrade Preparation (Scarified & Recompact)	(24,647) SF	\$0.80	-\$19,718	-\$1,972	-\$4,338	-\$1,585	-\$5,208	-\$1,381	\$1.39	-\$34,201	
<b>8.a) Storm Drain System</b>	<b>1 LS</b>	<b>-\$51,235</b>	<b>-\$51,235</b>								<b>-\$88,867</b>
4'x6' Concrete Box Culvert per Caltrans Std plan D80, T1= 8", T2=7", T3=6"	(45) LF	\$580	-\$26,146	-\$2,615	-\$5,752	-\$2,102	-\$6,906	-\$1,831	\$1,006	-\$45,351	
12" Wide Wingwalls Type "B", per Caltrans Std plan D84, H=11'	(183) LF	\$110	-\$20,088	-\$2,009	-\$4,419	-\$1,615	-\$5,308	-\$1,407	\$191	-\$34,843	
Pipe Culvert Headwall per Caltrans Std Plan D86B	(1) EA	\$5,000	-\$5,000	-\$500	-\$1,100	-\$402	-\$1,321	-\$350	\$8,673	-\$8,673	
<b>TOTAL COST : TO DELETE ROADWAY OVER CHANNEL</b>	<b>(24,647) SF</b>	<b>\$8.88</b>	<b>-\$218,834.20</b>	<b>-\$21,883</b>	<b>-\$48,144</b>	<b>-\$17,592</b>	<b>-\$57,797</b>	<b>-\$15,323</b>	<b>\$15.40</b>	<b>-\$379,572</b>	

## Quantities and Escalation



*Estimating  
Cost Analysis  
CPM Scheduling  
Claims Management  
Construction Progress*

**Lenax**

LA COUNTY DEPARTMENT OF PUBLIC WORKS



LADPW

EVOC (Base Scheme) New Site

ROM - CONSTRUCTION COST ESTIMATE

PROJECT AREAS & CONTROL QUANTITIES

02/02/16

PROJECT AREAS	SF	TOTALS SF
<b>SITE AREA</b>		
<b>Asphalt/Aggregate Base</b>		346,894
Driver Training Track( including Collision Avoidance area)	336,544	
EVOC Parking Area	10,350	
<b>Concrete Pavement/Aggregate Base</b>		
Skid Pad	92,276	92,276
<b>Compacted Soil</b>		
Compacted Soil	521,159	521,159
<b>Road Work over channel</b>		
Road Work over channel	24,647	24,647
<b>SUBTOTAL, SITE AREAS</b>		<b>984,976</b>
<b>Building Structures</b>		
Modular Trailer Offices and Restroom	5,000	
<b>SUBTOTAL, ENCLOSED AREAS</b>	<b>5,000</b>	
<b>COVERED AREAS</b>	<b>5,000</b>	
<b>TOTAL SITE AREA (SF)</b>		<b>984,976</b>
Acres		<b>24</b>

Owner: LADPW  
 Architect: GRUEN & ASSOCIATES  
 Estimator: Lenax Construction Services, Inc.  
 Institution: LADPW  
 Project: Pitchess Detention Center EVOC (Base Scheme) New Site  
 Phase: **ROM - CONSTRUCTION COST ESTIMATE**



### ESCALATION CALCULATION

START CONSTRUCTION 7/2/2017  
 CONSTRUCTION PERIOD 14 MONTHS  
 MID-POINT: 1/30/2018  
 END CONSTRUCTION 8/31/2018

PREPARATION DATE: 2/2/2016

ESCALATION PER YEAR =  
    2016    3.00%  
    2017    3.00%  
    2018    3.00%  
    2019    3.50%

Years	2016	12/31/2016	10.9 mo	2.74%	or	1.03
	2017	12/31/2017	12.0 mo	3.00%		1.03
	2018	1/30/2018	1.0 mo	0.25%		1.00
	2019		0.0 mo	0.00%		1.0

**ESCALATION:                      6.09%**

## **E. APPENDIX**

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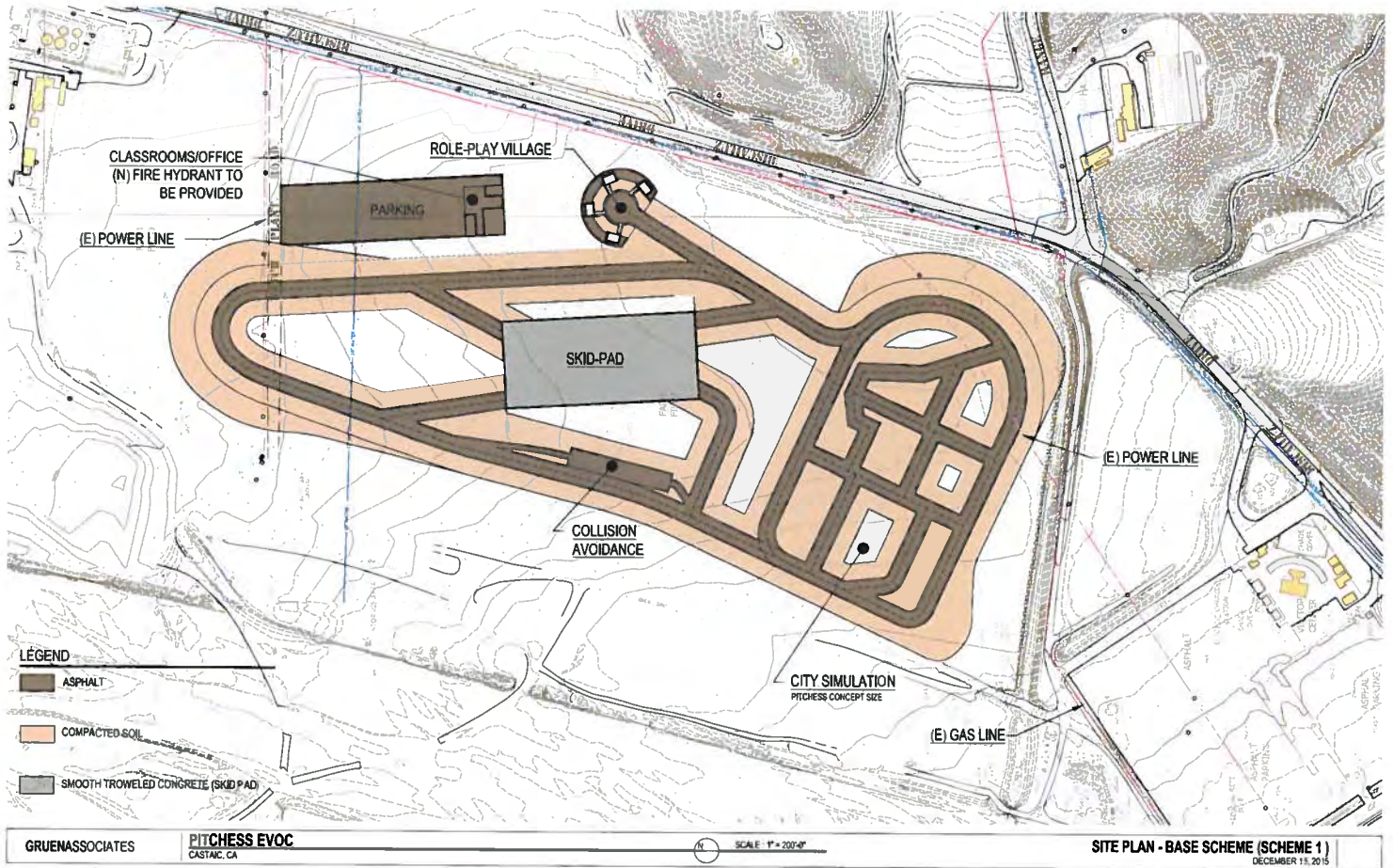
The following pages include Appendix items and are subset to page 19, i.e., 19.1, 19.2, 19.3, etc.

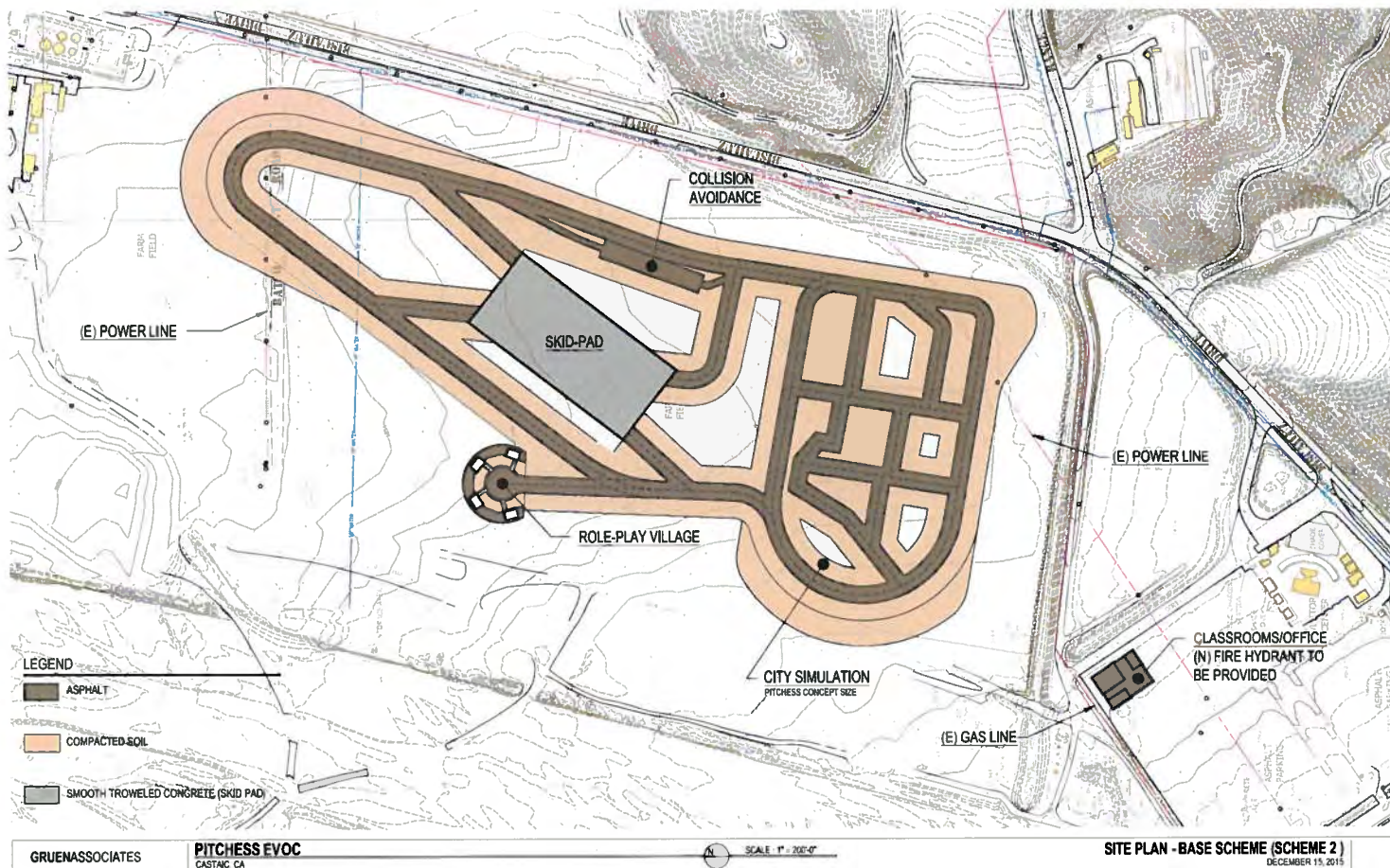
- 1. EVOC Layout Studies**
- 2. Pitchess Site Photos**
- 3. Pomona Site Photos**
- 4. Castaic Creek Area GIS Parcel Maps**
- 5. Parcel Profile Reports**
- 6. Castaic Area Community Standards District**
- 7. A-2 Heavy Agricultural Zone**
- 8. Very High Fire Hazard Severity Zone – Plan Review List**

**End of Report**

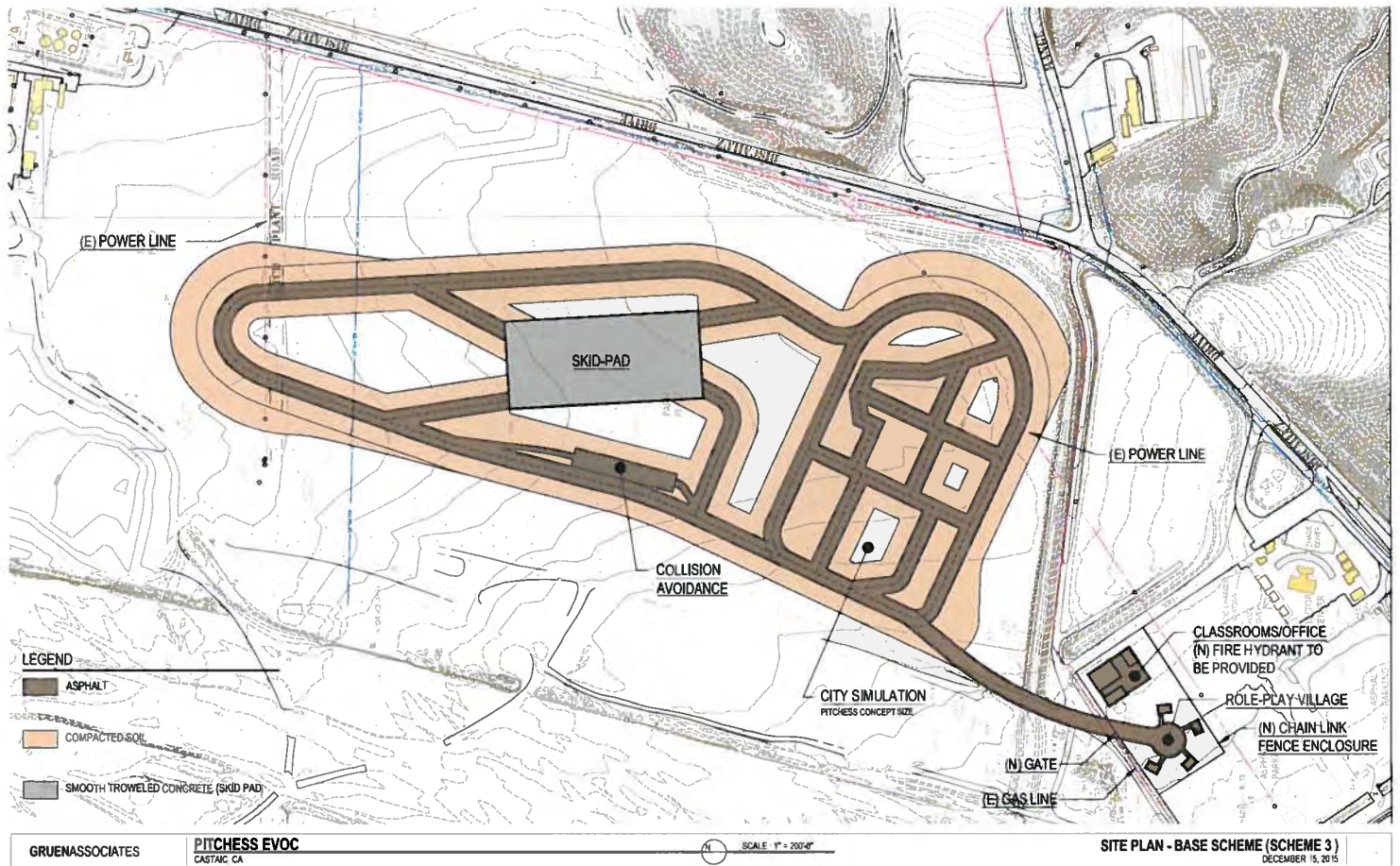


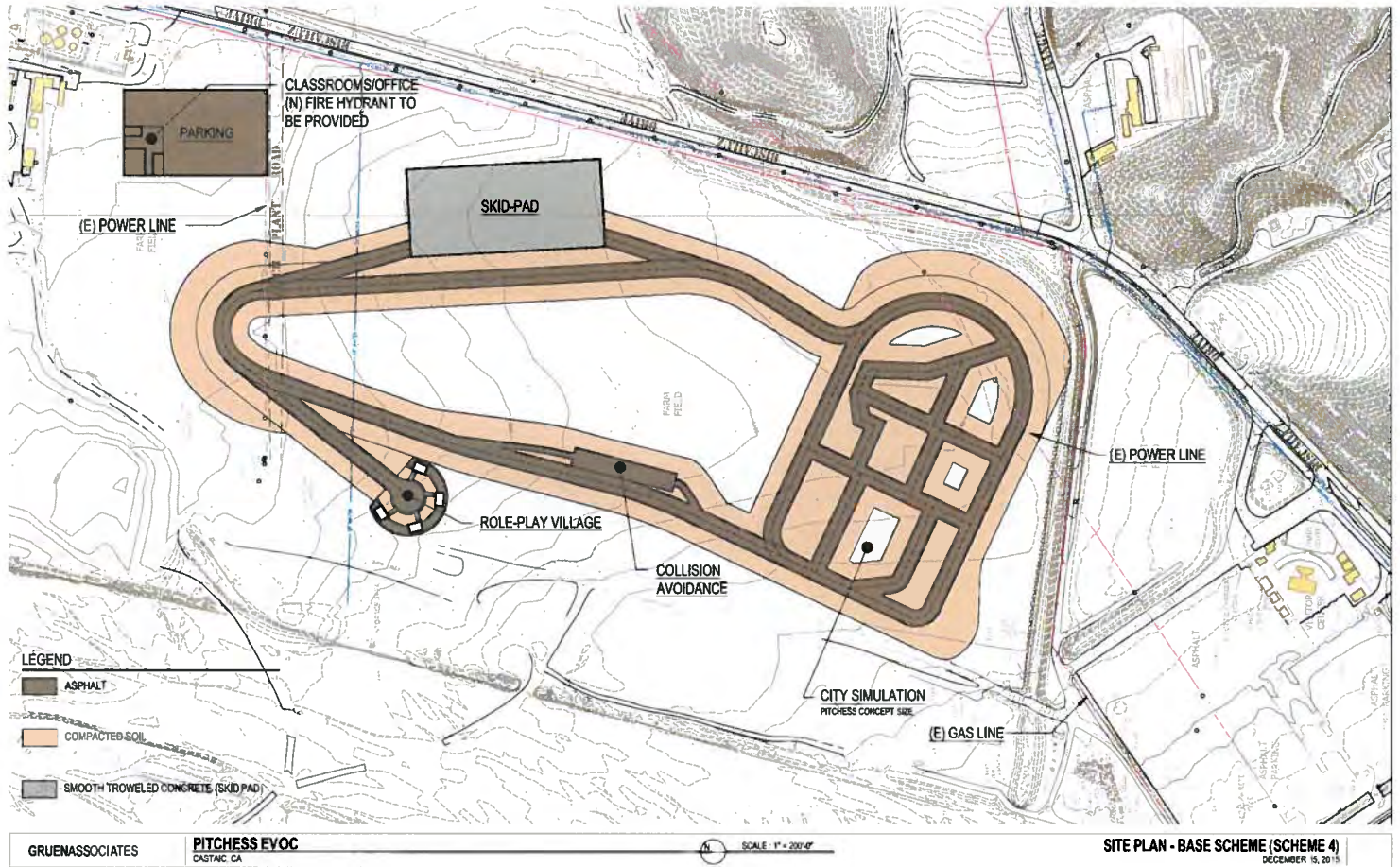
## **EVOC Layout Studies**



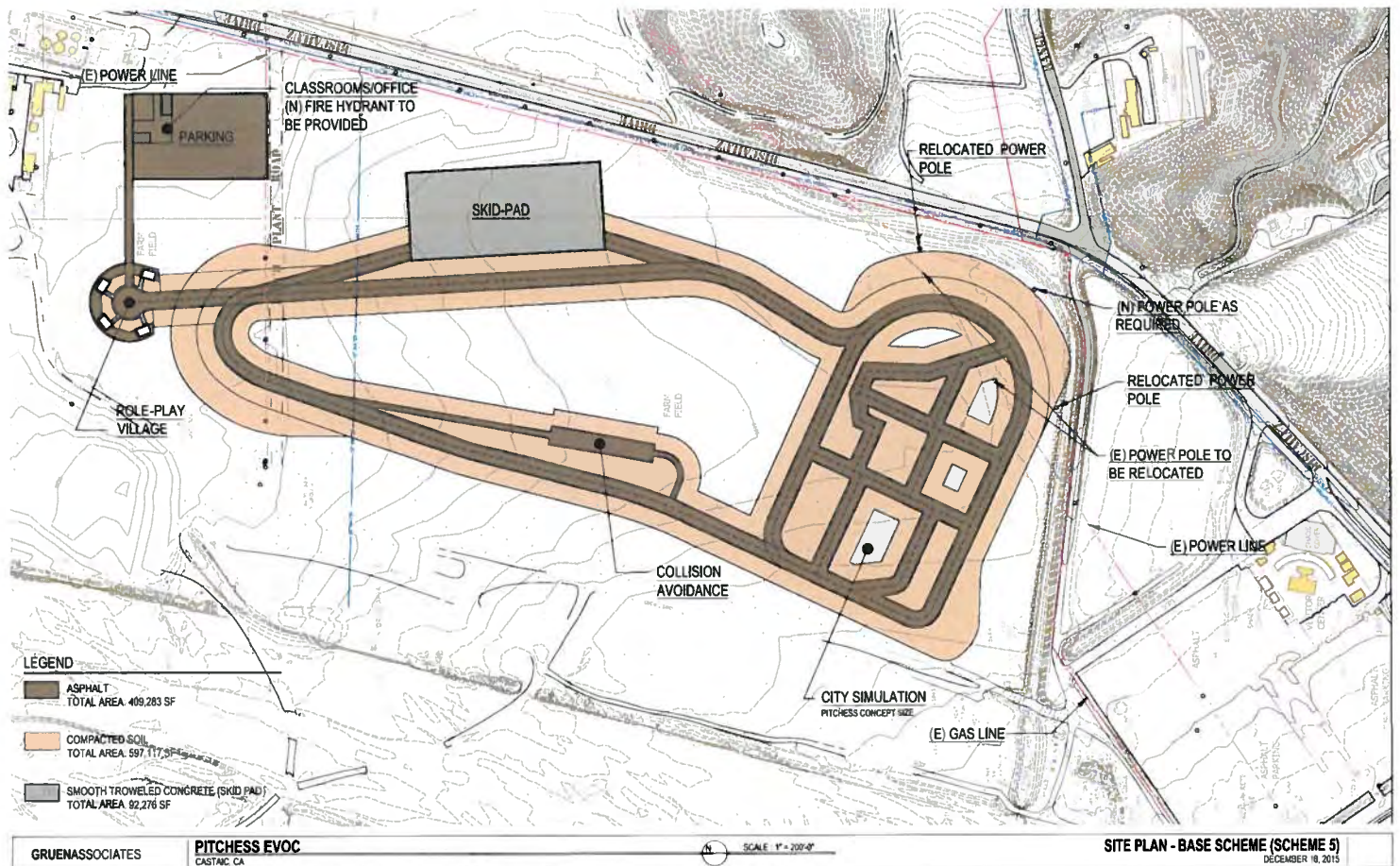


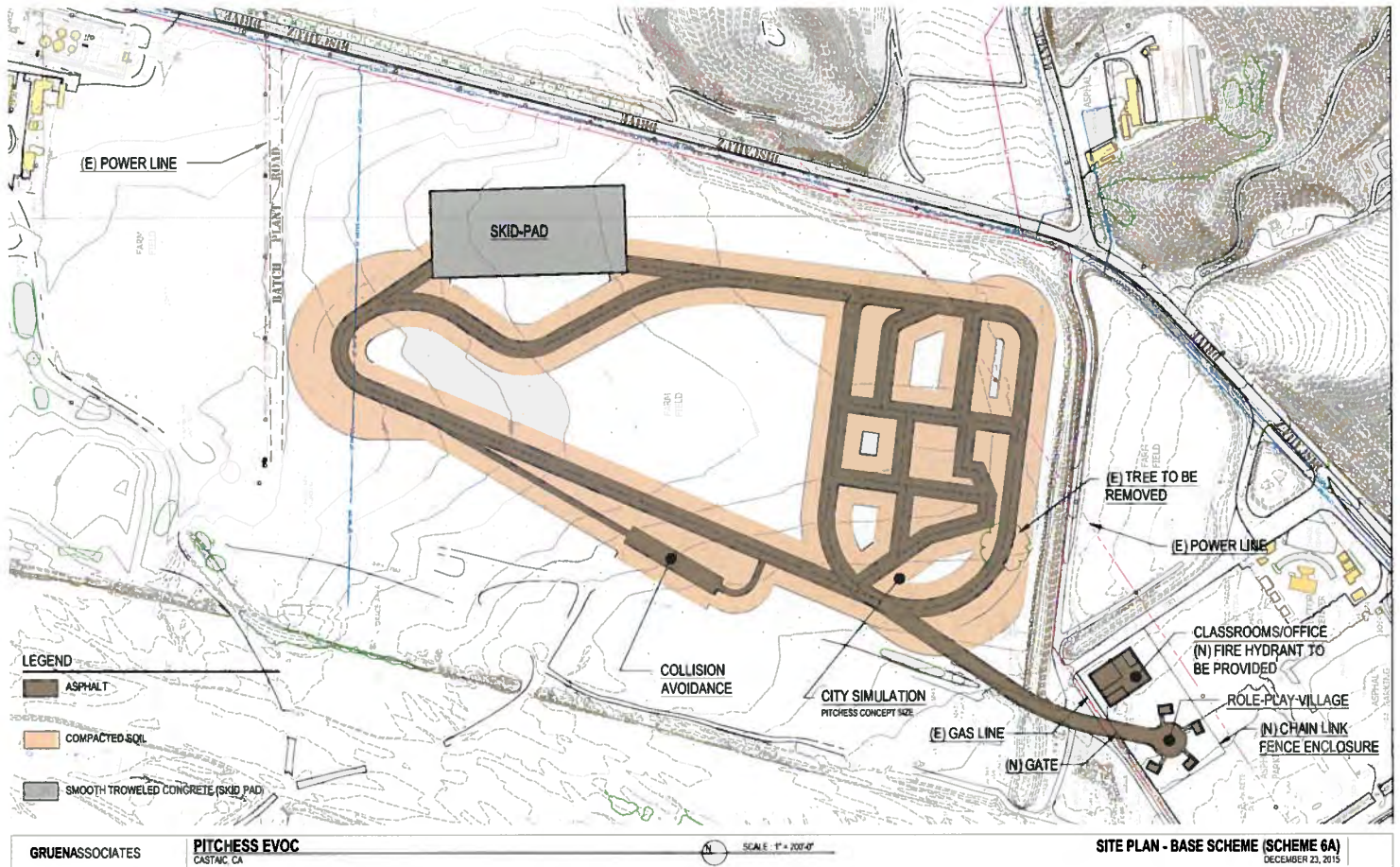




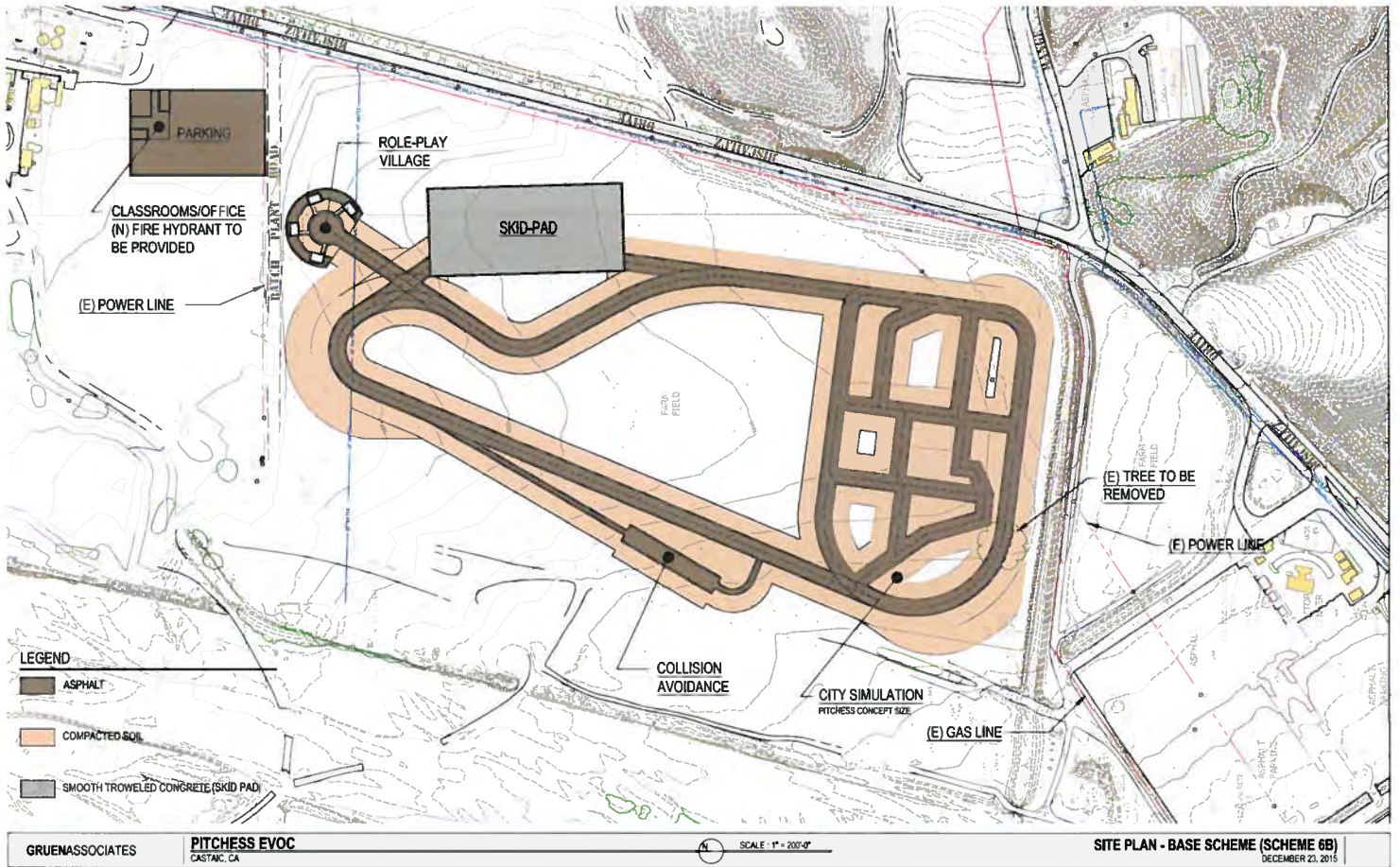












## **Pitchess Site Photos**



View of swale at south of site looking east towards Biscailuz Dr.



View of Pitchess Detention Center and parking lot looking east towards Biscailuz Dr.





View of Pitchess Detention Center and parking lot looking south.



Panorama of Pitchess Detention Center parking lot.



Panorama of Pitchess Detention Center parking lot and swale looking northwest.



Panorama from southwest of alternate site looking northeast.



View of existing tree from southwest of alternate site looking east towards Biscailuz Dr.





View from southwest of alternate site looking north.



View from dirt road southwest of alternate site looking north.



Panorama of Batch Plant Rd. at north of alternate site.



View of utilities along Batch Plant Rd. at north of alternate site looking east towards Biscailuz Dr.



## **Pomona Site Photos**

